



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,948	08/18/2006	Thomas M. Sullivan	71066-0011US	2130
22902	7590	08/21/2009		
CLARK & BRODY 1090 VERMONT AVENUE, NW SUITE 250 WASHINGTON, DC 20005			EXAMINER PHAM, MINH CHAU THI	
			ART UNIT 1797	PAPER NUMBER
			MAIL DATE 08/21/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/589,948

**Applicant(s)**

SULLIVAN, THOMAS M.

**Examiner**

MINH-CHAU T. PHAM

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF 298)  
Paper No(s)/Mail Date \_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

***Specification***

This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wen (7,156,897 B2).

Wen discloses an apparatus for cleansing air (8) comprising a source of microwave (11) that couples with contaminants or impurities in air to cause destructively polarization of the contaminants, a contaminant containment structure or a housing (20, 30 in Fig. 1) including a source of microwaves (11), a gas permeable material (14, col. 3, lines 19-31) covering each end of the microwave-reflective enclosure having openings preventing microwaves to escape, a passageway in the microwave enclosure and a gas permeable material having openings (42, 41 in Fig. 1) covering the passageway, and optionally a source of water, vapor or steam if the atmosphere in the enclosure or the liquids do not include a sufficient quantity of water (see col. 4, lines 3-11). See also details of Fig. 1, Abstract, col. 2, lines 5-42 and line 64 through col. 4, line 11, col. 4, line 60 through col. 5, line 12). Wen further discloses the source of microwave having high voltage electrodes in the range of 5 kv - 100 kv and

approximately 200 nm - 400 nm wavelength (see col. 3, lines 5-7, lines 62-64, col. 4, lines 1-3), and the impurities or contaminants comprising pathogens (see Abstract) which could be bacteria, viruses, fungal metabolites, spores, volatile chemicals and proteins. Wen also discloses a method of destroying contaminants in air comprising the steps of providing a source of contaminated or impurity laden air, placing at least the one or more contaminated or impurity laden air liquids in a supportive structure, and subjecting the air to microwave in the presence of one or more of water, water vapor, or steam for dipole polarization of the contaminants (see col. 4, lines 3-11). Claims 1-29 differ from the disclosure of Wen in that the details of contaminants being spores formed by endospore forming bacillus, the bacteria being clostridium botulinum, the protein being ricin including prions, etc., and the contaminant containment structure being one of yttrium oxide, carbon, iron, rare earth oxide, or titanium oxide. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to recognize that pathogens could be any kind or type of bacteria or viruses, and that the contaminant containment structure could be any one of yttrium oxide, carbon, iron, rare earth oxide, or titanium oxide, since it is well known in the art of improved infection and toxin eliminating device via radiation that could effectively destroy pathogens, insecticides, and toxic substances from the contaminated air stream by photochemical reaction with pathogens or other contaminants.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MINH-CHAU T. PHAM whose telephone number is

(571)272-1163. The examiner can normally be reached on Mon/Tues/Thur/Fri 7:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Minh-Chau T. Pham/  
Examiner, Art Unit 1797  
August 18, 2009